SolarEdge
Distributed Solar Power Harvesting Systems

2012
SolarEdge Vision

- To be the leading provider of module-level electronics for the PV industry
- To accelerate the pace toward grid parity and make clean energy affordable and widespread
The Problem
Traditional PV Systems

- Centralized Inverter
  - DC/AC
  - MPPT
  - No voltage shutdown
  - No module monitoring
Traditional Inverters: Module Mismatch Impact on Power Loss

The speed is limited by the performance of the weakest rider...
Mismatch and Loss Sources

Module mismatch challenges PV plant planners, installers & owners

- Manufacturing tolerance
- Temperature mismatch
- Soiling mismatch
- Undetected transport damage
- Uneven module aging rate
- Partial shading – inter-row, and cloud fronts

Graph: Power variance of identical modules after 20 years

Graph: Temperature mismatch

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Inherent Problems in Traditional Systems

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<th>Energy Loss</th>
<th>System Drawbacks</th>
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<td>Module mismatch (3-5% loss)</td>
<td>No module level monitoring</td>
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<td>Partial shading (2-25% loss)</td>
<td>Limited roof utilization</td>
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<td>Undervoltage/overvoltage (0-15%)</td>
<td>Safety hazards</td>
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<td>Dynamic MPPT loss (3-10% loss)</td>
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- SolarEdge solution overcomes all energy losses providing up to 25% more energy
- SolarEdge solves other system drawbacks at a price comparable to traditional inverters
Solution Overview & Benefits
Module Level Optimization: Module MPPT Prevents Mismatch Loss

With personal transmission gear, each rider can maximize his own potential, so the bicycle rides faster!
SolarEdge System Overview

- Module level optimization
- Fixed voltage – flexible design
- Module level monitoring
- Enhanced safety solution

Power Optimizer

Module embedded

Module add-on

Inverter

Monitoring Portal

Monitoring Server

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SolarEdge Products

Optimizers
- Advance semiconductor (ASIC) based
- Per-module Maximum Power Point Tracking (MPPT)
- 99.5% maximum efficiency
- Advanced, real-time performance measurement
- Automatic module shut-down for installer and firefighter safety

Special Inverters
- Inverters specifically designed for power optimizers
- 98% maximum efficiency
- Simpler design → Highest reliability
Module-Level Monitoring

- Automatic, accurate fault detection
  - Faults located on site map
  - No additional wiring
  - Web portal and mobile applications

- The result:
  - Remote diagnostics
  - Operations and maintenance cost reduction
  - Increased system availability and production
  - Proactive customer service
The only commercially available solution to deliver all following benefits, while reducing the cost of energy

- Maximum energy gain
  - Ground mounted system: 2-5%, commercial 2-10%, residential 2-25%

- Constraint-free site design
  - Optimal site space utilization at reduced cost

- Real-time module-level web monitoring
  - Increased uptime and remote diagnostics

- Automatic module shut-down
  - Unique electrocution prevention and fire safety
**SolarEdge at a Glance**

Established the DC power optimizer segment and leads it with a market share of over 70%

Over 1,600,000 power optimizers shipped to over 30 countries

More than 60,000 inverters shipped

Quarterly run rate of 100MW

Utility, commercial and residential solutions

Strategic partnerships across the PV value-chain from module manufacturers to integrators
Sales through leading integrators and distributors in over 30 countries

2011 worldwide distribution of sales

- Europe: 62%
- North America: 15%
- APAC: 8%
- ROW: 16%
High Quality Global Production

- To date over 1.6 million units shipped
- Automated production lines
  - Close partnership with leading manufacturers Jabil & Flextronics
  - Scalability to support 3 times year over year production volume increase
Thank you

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